

W-ROCK CROSS VANE:

Description

This work consists of the construction and maintenance of physical barriers placed in and along the stream at locations designated on the plans to direct the stream flow (thalweg) toward the center of the channel and to provide grade control.

The quantity of w-rock cross vanes to be installed will be affected by the actual conditions that occur during the construction of the project. The quantity of w-rock cross vanes may be increased, decreased, or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Materials

Refer to Division 10

Item	Section
Boulder	1042 and SP for Structure Stone
No. 57 Stone	1005
Riprap, Class A	1042-1
Filter Fabric for Drainage, Type 2	1056

Boulders shall be used as header and footer rocks for this device.

Construction Methods

W-rock cross vanes shall be constructed according to the W-Rock Cross Vane Detail shown on the plans or as directed. Four vanes, forming a “w” shape, with the vertices of the “w” pointing upstream, shall be constructed. Two vanes each approximately 1/4 of the stream channel’s bankfull width will form a 20°– 30° angle out from each of the streambanks toward upstream. The top elevation of both vanes will decrease from bankfull elevation toward the center of the channel at a slope of 4 to 20 percent. A vane running perpendicular to the stream’s flow along the streambed at zero percent slope will connect these two outside vanes on the upstream end to another pair of vanes at the center 1/2 of the stream channel. The two vanes at the center 1/2 of the stream channel connect at the center of the stream channel, forming a v with its vertices pointed downstream. These two vanes will form a 20°– 30° angle out from the center of the stream channel centerline toward upstream. The top elevation of both of these center vanes will decrease from 1/2 of bankfull elevation at the header rock vertices away from the center of the channel at a slope of 2 to 10 percent down to the streambed elevation where the tie in to the two perpendicular vanes. Install header and footer rocks according to the detail and plate the upstream side with Type 2 filter fabric and No. 57 stone. Voids between the header and footer rocks can be filled with hand-placed Class A riprap as directed. Footer rocks shall be placed such that the header rock is at streambed elevation.

The W-rock cross vane shall be keyed into the bank at the downstream end as shown on the W-Rock Cross Vane Detail.

Measurement and Payment

Boulders will be measured and paid for as provided elsewhere in this contract.

No. 57 Stone will be measured and paid for as provided elsewhere in this contract.

Riprap, Class __ will be measured and paid for in accordance with Article 876-4 of the *Standard Specifications*.

Filter Fabric for Drainage will be measured and paid for in accordance with Article 876-4 of the *Standard Specifications*.

Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to construct the w-rock cross vanes.